Owner's Manual & Safety Instructions

Save This Manual Keep this manual for the safety warnings and precautions, assembly, operating, inspection, maintenance and cleaning procedures. Write the product's serial number in the back of the manual near the assembly diagram (or month and year of purchase if product has no number). Keep this manual and the receipt in a safe and dry place for future reference.

CENTRAL MACHINERY®

6" BENCH GRINDER WITH LIGHT

REV 14b

Visit our website at: http://www.harborfreight.com
Email our technical support at: productsupport@harborfreight.com

ITEM 61748

When unpacking, make sure that the product is intact and undamaged. If any parts are missing or broken, please call 1-888-866-5797 as soon as possible.

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No portion of this manual or any artwork contained herein may be reproduced in any shape or form without the express written consent of Harbor Freight Tools.
Diagrams within this manual may not be drawn proportionally. Due to continuing improvements, actual product may differ slightly from the product described herein. Tools required for assembly and service may not be included.

⚠WARNING

Read this material before using this product. Failure to do so can result in serious injury. SAVE THIS MANUAL.

Table of Contents

Safety 3
Specifications 7
Setup 8
Operation 10
Maintenance 12
Parts List and Diagram 14
Warranty 16

WARNING SYMBOLS AND DEFINITIONS	
⚠	This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.
⚠ DANGER	Indicates a hazardous situation which, if not avoided, will result in death or serious injury.
⚠ WARNING	Indicates a hazardous situation which, if not avoided, could result in death or serious injury.
⚠ CAUTION	Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.
NOTICE CAUTION	Addresses practices not related to personal injury.

IMPORTANT SAFETY INFORMATION

General Tool Safety Warnings

⚠WARNING

Read all safety warnings and instructions.
Failure to follow the warnings and instructions may result in electric shock, fire and/or serious injury.
Save all warnings and instructions for future reference.

1. KEEP GUARDS IN PLACE and in working order.
2. REMOVE ADJUSTING KEYS AND WRENCHES. Form habit of checking to see that keys and adjusting wrenches are removed from tool before turning it on.
3. KEEP WORK AREA CLEAN. Cluttered areas and benches invite accidents.
4. DON'T USE IN DANGEROUS ENVIRONMENT. Don't use power tools in damp or wet locations, or expose them to rain. Keep work area well lighted.
5. KEEP CHILDREN AWAY. All visitors should be kept safe distance from work area.
6. MAKE WORKSHOP KID PROOF with padlocks, master switches, or by removing starter keys.
7. DON'T FORCE TOOL. It will do the job better and safer at the rate for which it was designed.
8. USE RIGHT TOOL. Don't force tool or attachment to do a job for which it was not designed.

Table A: RECOMMENDED MINIMUM WIRE GAUGE FOR EXTENSION CORDS (120 VOLT)

NAMEPLATE AMPERES (at full load)	EXTENSION CORD LENGTH			
	25′	50′	100′	150′
0 – 6	18	16	16	14
6.1 – 10	18	16	14	12
10.1 – 12	16	16	14	12
12.1 – 16	14	12	**Do not use.**	

9. USE PROPER EXTENSION CORD. Make sure your extension cord is in good condition. When using an extension cord, be sure to use one heavy enough to carry the current your product will draw. An undersized cord will cause a drop in line voltage resulting in loss of power and overheating. Table A shows the correct size to use depending on cord length and nameplate ampere rating. If in doubt, use the next heavier gauge. The smaller the gauge number, the heavier the cord.
10. WEAR PROPER APPAREL. Do not wear loose clothing, neckties, rings, bracelets, or other jewelry which may get caught in moving parts. Nonslip footwear is recommended. Wear protective hair covering to contain long hair.
11. ALWAYS USE SAFETY GLASSES. Also use face or dust mask if cutting operation is dusty. Everyday eyeglasses only have impact resistant lenses, they are NOT safety glasses.
12. SECURE WORK. Use clamps or a vise to hold work when practical. It's safer than using your hand and it frees both hands to operate tool.
13. DON'T OVERREACH. Keep proper footing and balance at all times.
14. MAINTAIN TOOLS WITH CARE. Keep tools sharp and clean for best and safest performance. Follow instructions for lubricating and changing accessories.
15. DISCONNECT TOOLS before servicing; when changing accessories, such as blades, bits, cutters, and the like.
16. REDUCE THE RISK OF UNINTENTIONAL STARTING. Make sure switch is in off position before plugging in.
17. USE RECOMMENDED ACCESSORIES. Consult the owner's manual for recommended accessories. The use of improper accessories may cause risk of injury to persons.
18. NEVER STAND ON TOOL. Serious injury could occur if the tool is tipped or if the cutting tool is unintentionally contacted.
19. CHECK DAMAGED PARTS. Before further use of the tool, a guard or other part that is damaged should be carefully checked to determine that it will operate properly and perform its intended function – check for alignment of moving parts, binding of moving parts, breakage of parts, mounting, and any other conditions that may affect its operation. A guard or other part that is damaged should be properly repaired or replaced.
20. DIRECTION OF FEED. Feed work into a blade or cutter against the direction of rotation of the blade or cutter only.
21. NEVER LEAVE TOOL RUNNING UNATTENDED. TURN POWER OFF.

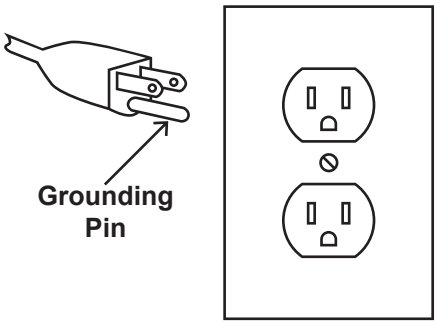
Grounding Instructions

⚠WARNING

TO PREVENT ELECTRIC SHOCK AND DEATH FROM INCORRECT GROUNDING WIRE CONNECTION READ AND FOLLOW THESE INSTRUCTIONS:

110-120 V~ Grounded Tools: Tools with Three Prong Plugs

1. In the event of a malfunction or breakdown, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. This tool is equipped with an electric cord having an equipment-grounding conductor and a grounding plug. The plug must be plugged into a matching outlet that is properly installed and grounded in accordance with all local codes and ordinances.
2. Do not modify the plug provided – if it will not fit the outlet, have the proper outlet installed by a qualified electrician.
3. Improper connection of the equipment-grounding conductor can result in a risk of electric shock. The conductor with insulation having an outer surface that is green with or without yellow stripes is the equipment-grounding conductor. If repair or replacement of the electric cord or plug is necessary, do not connect the equipment-grounding conductor to a live terminal.
4. Check with a qualified electrician or service personnel if the grounding instructions are not completely understood, or if in doubt as to whether the tool is properly grounded.
5. Use only 3-wire extension cords that have 3-prong grounding plugs and 3-pole receptacles that accept the tool's plug.
6. Repair or replace damaged or worn cord immediately.



125 V~ 3-Prong Plug and Outlet (for up to 125 V~ and up to 15 A)

7. This tool is intended for use on a circuit that has an outlet that looks like the one illustrated above in **125 V~ 3-Prong Plug and Outlet**. The tool has a grounding plug that looks like the plug illustrated above in **125 V~ 3-Prong Plug and Outlet**.
8. The outlet must be properly installed and grounded in accordance with all codes and ordinances.
9. Do not use an adapter to connect this tool to a different outlet.

Grinder Safety Warnings

For Your Own Safety Read Instruction Manual Before Operating Grinder

1. Wear eye protection.
2. Use grinding wheel suitable for speed of grinder.
3. Replace cracked wheel immediately.
4. Always use guards and eye shields.
5. Do not overtighten wheel nut.
6. Use only flanges furnished with the grinder.
7. Adjust distance between wheel and work rest to maintain 0.0625 inch or less separation as the diameter of the wheel decreases with use.
8. Frequently clean grinding dust from beneath grinder.
9. Wear a full face shield over ANSI-approved safety goggles during use.
10. Do not grind with side of wheel unless wheel is specifically designed for that type of grinding.
11. **DO NOT OPERATE WITH ANY GUARD DISABLED, DAMAGED, OR REMOVED. Moving guards must move freely and close instantly.**
12. The use of accessories or attachments not recommended by the manufacturer may result in a risk of injury to persons.
13. When servicing use only identical replacement parts.
14. Only use safety equipment that has been approved by an appropriate standards agency. Unapproved safety equipment may not provide adequate protection. Eye protection must be ANSI-approved and breathing protection must be NIOSH-approved for the specific hazards in the work area.
15. Stay alert, watch what you are doing and use common sense when operating a power tool. Do not use a power tool while you are tired or under the influence of drugs, alcohol or medication. A moment of inattention while operating power tools may result in serious personal injury.
16. Industrial applications must follow OSHA guidelines.
17. Maintain labels and nameplates on the tool. These carry important safety information. If unreadable or missing, contact Harbor Freight Tools for a replacement.
18. Avoid unintentional starting. Prepare to begin work before turning on the tool.
19. People with pacemakers should consult their physician(s) before use. Electromagnetic fields in close proximity to heart pacemaker could cause pacemaker interference or pacemaker failure.
20. WARNING: Some dust created by power sanding, sawing, grinding, drilling, and other construction activities, contains chemicals known [to the State of California] to cause cancer, birth defects or other reproductive harm. Some examples of these chemicals are:
    • Lead from lead-based paints
    • Crystalline silica from bricks and cement or other masonry products
    • Arsenic and chromium from chemically treated lumber
    Your risk from these exposures varies, depending on how often you do this type of work. To reduce your exposure to these chemicals: work in a well ventilated area, and work with approved safety equipment, such as those dust masks that are specially designed to filter out microscopic particles. (California Health & Safety Code § 25249.5, *et seq.*)
21. WARNING: Handling the cord on this product will expose you to lead, a chemical known to the State of California to cause cancer, and birth defects or other reproductive harm. Wash hands after handling. (California Health & Safety Code § 25249.5, *et seq.*)
22. The warnings, precautions, and instructions discussed in this instruction manual cannot cover all possible conditions and situations that may occur. It must be understood by the operator that common sense and caution are factors which cannot be built into this product, but must be supplied by the operator.

Vibration Safety

This tool vibrates during use. Repeated or long-term exposure to vibration may cause temporary or permanent physical injury, particularly to the hands, arms and shoulders. To reduce the risk of vibration-related injury:

1. Anyone using vibrating tools regularly or for an extended period should first be examined by a doctor and then have regular medical check-ups to ensure medical problems are not being caused or worsened from use. Pregnant women or people who have impaired blood circulation to the hand, past hand injuries, nervous system disorders, diabetes, or Raynaud's Disease should not use this tool. If you feel any medical or physical symptoms related to vibration (such as tingling, numbness, and white or blue fingers), seek medical advice as soon as possible.
2. Do not smoke during use. Nicotine reduces the blood supply to the hands and fingers, increasing the risk of vibration-related injury.
3. Use tools with the lowest vibration when there is a choice between different processes.
4. Include vibration-free periods each day of work.
5. Grip tool as lightly as possible (while still keeping safe control of it). Let the tool do the work.
6. To reduce vibration, maintain the tool as explained in this manual. If any abnormal vibration occurs, stop use immediately.

SAVE THESE INSTRUCTIONS.

Specifications

Electrical Rating	120V~ / 60Hz / 2.1A
No Load Speed	3450 RPM
Max. Wheel Size	Ø6″ (150mm) x 3/4″ Thick x 1/2″ Arbor
Arbor Size	1/2″
Base Size	5-1/2″ x 6-1/3″
Mounting Holes	Two 3/8″
Work Light Bulb	40 W Household type

Intertek
3168328

Setup - Before Use:

Read the ENTIRE IMPORTANT SAFETY INFORMATION section at the beginning of this manual including all text under subheadings therein before set up or use of this product.

⚠WARNING

TO PREVENT SERIOUS INJURY FROM ACCIDENTAL OPERATION:
Turn the Power Switch of the tool off and unplug the tool from its electrical outlet before performing any procedure in this section.

Note: For additional information regarding the parts listed in the following pages, refer to the Assembly Diagram near the end of this manual.

Assembly/Mounting

1. Install Right Work Rest (38) to the Right Wheel Guard (37). Use Knob (6), Screw (18), and Nut (8) to secure it in place as shown in Figure A.

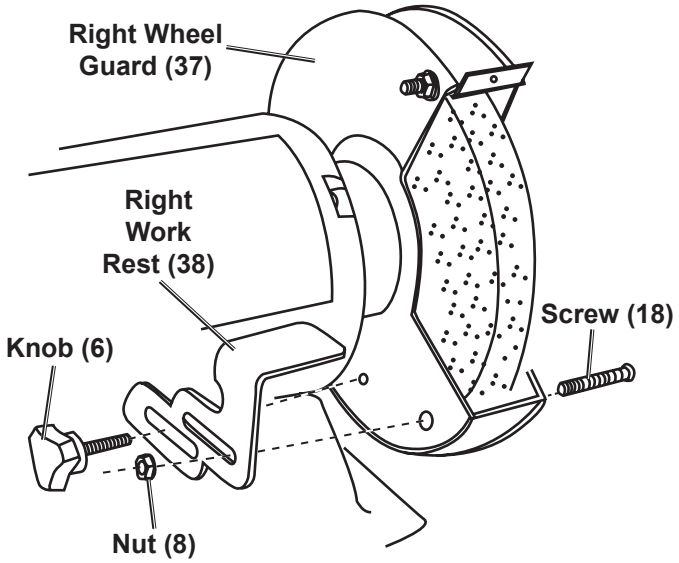


Figure A: Work Rest Installation

2. Install Left Work Rest (7) to the Left Wheel Guard (9) using Knob (6), Screw (18), and Nut (8).
3. Adjust the Work Rests to within 1/16″ of the Grinding Wheel. To adjust this distance, loosen Knobs (6) and move Work Rests (7,38).
4. Attach a Spark Guard (12) to each Wheel Guard (37,9) using a Screw (11) as shown in Figure B. Adjust each Spark Guard (12) to within 1/16” (0.0625″) of the Grinding Wheel and tighten each Screw (12).

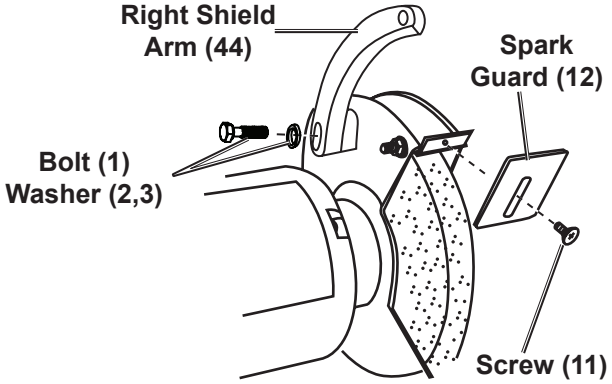


Figure B: Spark Guard and Right Shield Arm Installation

5. Attach Right Shield Arm (44) to the Right Wheel Guard (37) using Bolt (1) and Washers (2,3), see Figure B.
6. Attach Left Shield Arm (4) to the Left Wheel Guard (9) using Bolt (1) and Washers (2,3).
7. Attach right Eye Shield (43) to Right Shield Arm (44) using Knob (48) as shown in Figure C.
8. Attach left Eye Shield (5) to Left Shield Arm (4) using Knob (48).

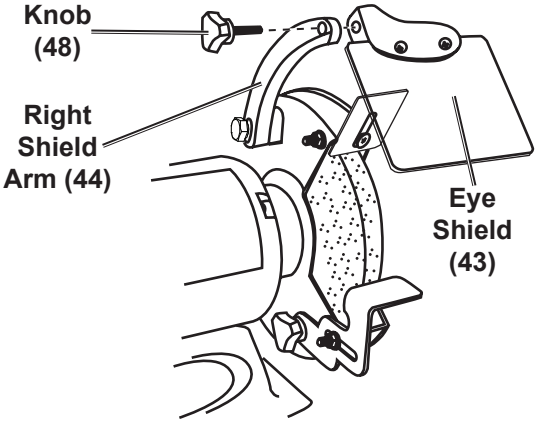
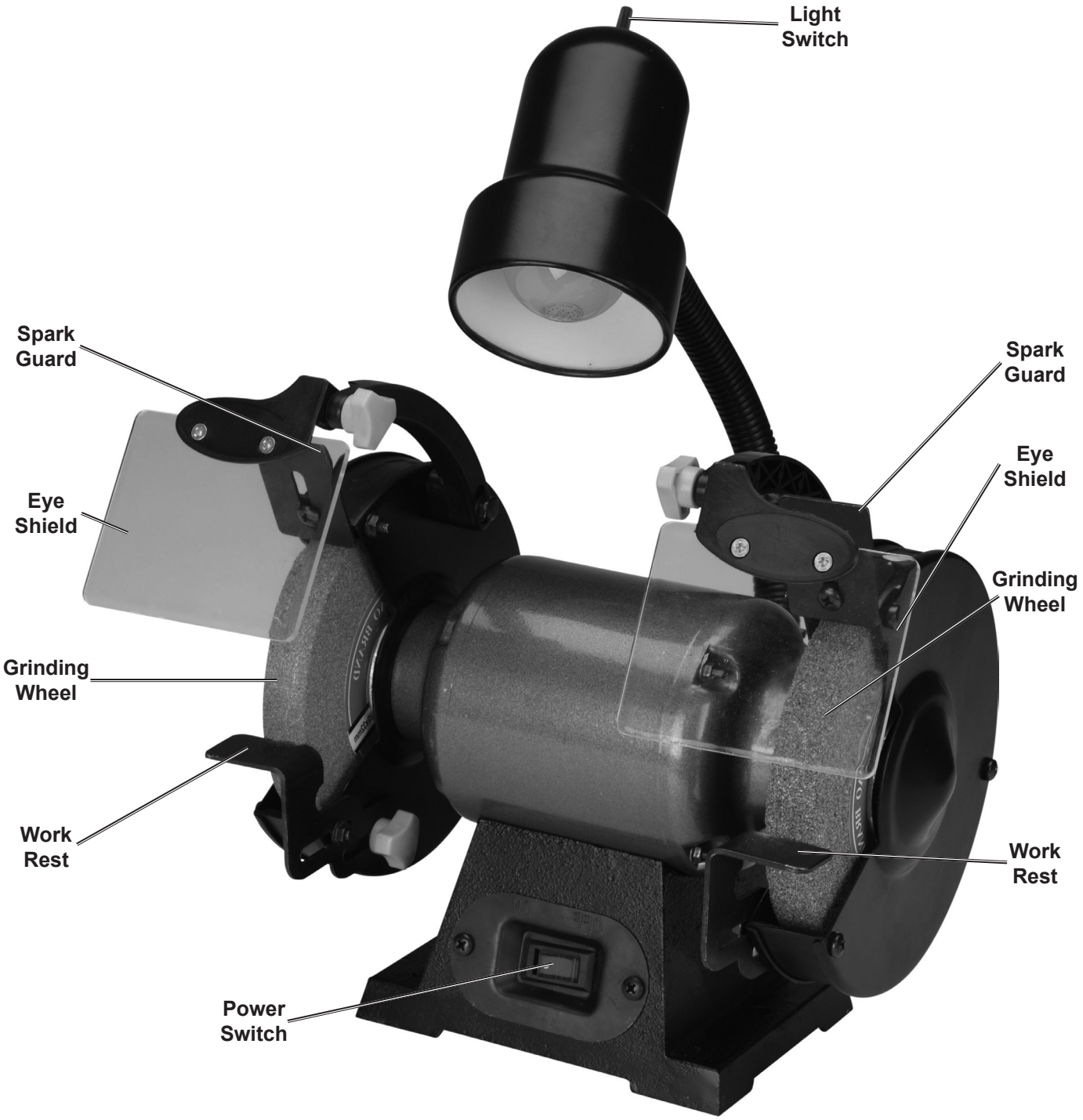


Figure C: Right Eye Shield Installation

Functions


Light Switch
Spark Guard
Spark Guard
Eye Shield
Eye Shield
Grinding Wheel
Grinding Wheel
Work Rest
Work Rest
Power Switch

Read the ENTIRE IMPORTANT SAFETY INFORMATION section at the beginning of this manual including all text under subheadings therein before set up or use of this product.

Tool Set Up

⚠WARNING

TO PREVENT SERIOUS INJURY FROM ACCIDENTAL OPERATION:
Turn the Power Switch of the tool off and unplug the tool from its electrical outlet before performing any procedure in this section.

TO PREVENT SERIOUS INJURY:
DO NOT OPERATE WITH ANY GUARD DISABLED, DAMAGED, OR REMOVED.
Moving guards must move freely and close instantly.

Changing a Grinding Wheel

1. The Grinding Wheel MUST be:
   - rated to at least 3450 RPM.
   - no larger than 6″ (150mm) in diameter.
   - fitted with a 1/2″ or 5/8″ round arbor hole.
   - 3/4″ thick.
   - suitable for edge grinding, not surface grinding.
   - dry and clean.
   - proven undamaged by inspection and by the ring-test explained below.
2. Remove the three Screws (18) that hold on the Wheel Cover (17,35).
3. Hold opposite wheel to hold the Spindle (42) in place while loosening the Hex Nut (16/34). **NOTICE: Nut (3) has left-handed threads and loosens clockwise.**
4. Remove the outer Flange (14). Keep the inner Flange (14) in position on the Spindle.
5. Closely inspect the wheel before mounting. Perform a ring-test on the wheel (unless wheel is smaller than 4″ or is an unusual shape) as follows:
   a. Suspend wheel using a dowel or finger through the arbor hole.
   b. Tap the flat side of the wheel with a light non-metallic object, such as a screwdriver handle, at a point 45° from the vertical center line on each side of the wheel and 1 – 2 inches from the edge of the wheel (see Illustration).
   c. Rotate the wheel 90° and repeat the test until the entire wheel has been checked.
   d. An undamaged wheel will give a clear tone. If cracked, there will be a dead sound and not a clear ring.

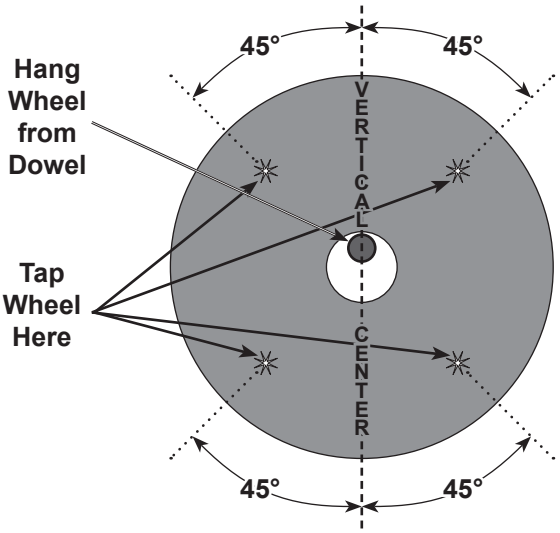


Figure D: Ring Test

6. For wheels with paper gaskets (blotters) or metal gaskets: Slip the Grinding Wheel onto the Spindle with the gasket first. The gasket should be centered on the Grinding Wheel and the Wheel and gasket should rest flat against the inner Flange. **⚠WARNING: To prevent serious injury, gaskets must be used for all grinding wheels they are provided with. Gaskets help prevent grinding wheel damage and wheel slippage, causes of wheel failure.**
7. Place the outer flange onto the Spindle. Thread the Nut (16/34) onto the Spindle. **NOTICE: Nut (3) has left-handed threads and tightens counterclockwise.** Wrench tighten only enough so that the Wheel is securely held on the Spindle. **⚠WARNING: To prevent serious injury, do not overtighten Nut. Overtightening can damage the wheel, causing wheel failure.**

Workpiece and Work Area Set Up

1. Designate a work area that is clean and well-lit. The work area must not allow access by children or pets to prevent distraction and injury.
2. Route the power cord along a safe route to reach the work area without creating a tripping hazard or exposing the power cord to possible damage. The power cord must reach the work area with enough extra length to allow free movement while working.
3. There must not be objects, such as utility lines, nearby that will present a hazard while working.

General Operating Instructions

1. Make sure that the Switch is in the off-position, then plug in the tool.
2. Turn on the tool.
3. Allow the tool to come up to full speed before touching the wheel.
4. Apply the workpiece to the wheel, allowing the tool to operate at full speed. If the tool bogs down, use lighter pressure.
5. To create a smoother surface, keep the workpiece moving over the wheel.
6. To prevent accidents, turn off the tool and disconnect its power supply after use. Clean, then store the tool indoors out of children's reach.

Procedures not specifically explained in this manual must be performed only by a qualified technician.

⚠WARNING

TO PREVENT SERIOUS INJURY FROM ACCIDENTAL OPERATION:
Turn the Power Switch of the tool off and unplug the tool from its electrical outlet before performing any procedure in this section.

TO PREVENT SERIOUS INJURY FROM TOOL FAILURE:
Do not use damaged equipment. If abnormal noise or vibration occurs, have the problem corrected before further use.

Cleaning, Maintenance, and Lubrication

1. **BEFORE EACH USE,** inspect the general condition of the tool. Check for:
   - loose hardware,
   - misalignment or binding of moving parts,
   - cracked or broken parts,
   - damaged electrical wiring, and
   - any other condition that may affect its safe operation.
2. **AFTER USE,** wipe external surfaces of the tool with clean cloth.
3. Periodically, wear ANSI-approved safety goggles and NIOSH-approved breathing protection and blow dust and grit out of the motor vents using dry compressed air.
4. **Bulb Replacement -**
   Allow bulb to cool completely before replacing it. Replace it only with a 40 W or smaller household bulb.
5. **⚠WARNING! If the supply cord of this power tool is damaged, it must be replaced only by a qualified service technician.**

Accessory Storage and Handling

1. Handle accessories carefully to prevent dropping or bumping. Do not use wheels that have been dropped or bumped.
2. Store accessories in shelves, racks, boxes, or drawers. Keep storage area dry and above freezing. Any grinding or cut-off wheels exposed to humidity or freezing temperatures must not be used.

Troubleshooting

Problem	Possible Causes	Likely Solutions
Tool will not start.	1. Cord not connected. 2. No power at outlet. 3. Tool's thermal reset breaker tripped (if equipped). 4. Internal damage or wear. (Carbon brushes or switch, for example.)	1. Check that cord is plugged in. 2. Check power at outlet. If outlet is unpowered, turn off tool and check circuit breaker. If breaker is tripped, make sure circuit is right capacity for tool and circuit has no other loads. 3. Turn off tool and allow to cool. Press reset button on tool. 4. Have technician service tool.
Tool operates slowly.	Extension cord too long or wire size too small.	Eliminate use of extension cord. If an extension cord is needed, use one with the proper diameter for its length and load. See **Table A** on page 3.
Performance decreases over time.	1. Accessory dull or damaged. 2. Carbon brushes worn or damaged.	1. Keep cutting accessories sharp. Replace as needed. 2. Have qualified technician replace brushes.
Excessive noise or rattling.	1. Internal damage or wear. (Carbon brushes or bearings, for example.)	1. Have technician service tool.
Overheating.	1. Forcing machine to work too fast. 2. Accessory dull or damaged. 3. Blocked motor housing vents. 4. Motor being strained by long or small diameter extension cord.	1. Allow machine to work at its own rate. 2. Keep cutting accessories sharp. Replace as needed. 3. Wear ANSI-approved safety goggles and NIOSH-approved dust mask/respirator while blowing dust out of motor using compressed air. 4. Eliminate use of extension cord. If an extension cord is needed, use one with the proper diameter for its length and load. See **Table A** on page 3.

Follow all safety precautions whenever diagnosing or servicing the tool. Disconnect power supply before service.

PLEASE READ THE FOLLOWING CAREFULLY

THE MANUFACTURER AND/OR DISTRIBUTOR HAS PROVIDED THE PARTS LIST AND ASSEMBLY DIAGRAM IN THIS MANUAL AS A REFERENCE TOOL ONLY. NEITHER THE MANUFACTURER OR DISTRIBUTOR MAKES ANY REPRESENTATION OR WARRANTY OF ANY KIND TO THE BUYER THAT HE OR SHE IS QUALIFIED TO MAKE ANY REPAIRS TO THE PRODUCT, OR THAT HE OR SHE IS QUALIFIED TO REPLACE ANY PARTS OF THE PRODUCT. IN FACT, THE MANUFACTURER AND/OR DISTRIBUTOR EXPRESSLY STATES THAT ALL REPAIRS AND PARTS REPLACEMENTS SHOULD BE UNDERTAKEN BY CERTIFIED AND LICENSED TECHNICIANS, AND NOT BY THE BUYER. THE BUYER ASSUMES ALL RISK AND LIABILITY ARISING OUT OF HIS OR HER REPAIRS TO THE ORIGINAL PRODUCT OR REPLACEMENT PARTS THERETO, OR ARISING OUT OF HIS OR HER INSTALLATION OF REPLACEMENT PARTS THERETO.

Parts List

Part	Description	Qty
1	Hex Bolt	2
2	Spring Washer	2
3	Flat Washer	2
4	Left Shield Arm	1
5	Left Eye Shield	1
6	Knob	2
7	Left Work Rest	1
8	Nut	6
9	Left Wheel Guard	1
10	Carriage Bolt	2
11	Screw	2
12	Spark Guard	2
13	Philips Screw+Spring Washer	6
14	Flange	4
15	Grinding Wheel 150×20×12.7	1
16	Hex Nut	1
17	Left Wheel Cover	1
18	Screw	6
19	Hex Flange Nut	4
20	End Bell	2
21	Wavy washer	1
22	Stator	1
23	Cord Bushing	1
24	Toothed Washer	1
25	Philips Screw+Flat Washer+Spring Washer	2

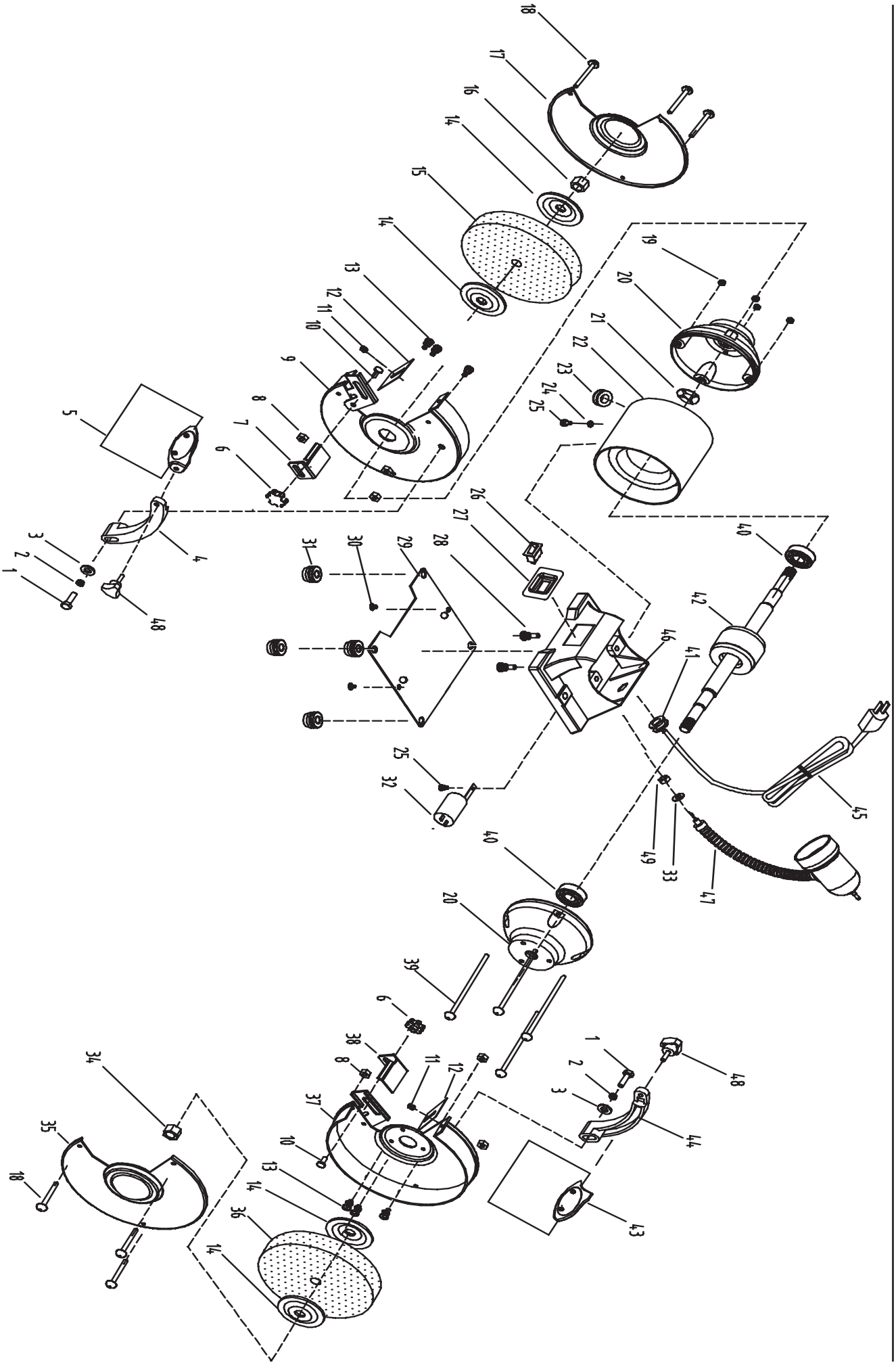
Part	Description	Qty
26	Switch	1
27	Switch Plate	1
28	Philips Screw+Spring Washer	2
29	Bottom Plate	1
30	Philips Screw+Flat Washer	2
31	Rubber Foot	4
32	Capacitor	1
33	Flat Washer	1
34	Hex Nut	1
35	Right Wheel Cover	1
36	Grinding Wheel 150×20×12.7	1
37	Right Wheel Guard	1
38	Right Work Rest	1
39	Philips Screw+Flat Washer	4
40	Bearing	2
41	Cord Bushing	1
42	Spindle	1
43	Right Eye Shield	1
44	Right Shield Arm	1
45	Power Cord	1
46	Base	1
47	Work Lamp	1
48	Eyeshield Locking Knob	2
49	Lamp Locking Nut	1

Record Product's Serial Number Here:_____

Note: If product has no serial number, record month and year of purchase instead.

Note: Some parts are listed and shown for illustration purposes only, and are not available individually as replacement parts.

Assembly Diagram



Limited 90 Day Warranty

Harbor Freight Tools Co. makes every effort to assure that its products meet high quality and durability standards, and warrants to the original purchaser that this product is free from defects in materials and workmanship for the period of 90 days from the date of purchase. This warranty does not apply to damage due directly or indirectly, to misuse, abuse, negligence or accidents, repairs or alterations outside our facilities, criminal activity, improper installation, normal wear and tear, or to lack of maintenance. We shall in no event be liable for death, injuries to persons or property, or for incidental, contingent, special or consequential damages arising from the use of our product. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation of exclusion may not apply to you. THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS.

To take advantage of this warranty, the product or part must be returned to us with transportation charges prepaid. Proof of purchase date and an explanation of the complaint must accompany the merchandise. If our inspection verifies the defect, we will either repair or replace the product at our election or we may elect to refund the purchase price if we cannot readily and quickly provide you with a replacement. We will return repaired products at our expense, but if we determine there is no defect, or that the defect resulted from causes not within the scope of our warranty, then you must bear the cost of returning the product.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

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